

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing Of Claims:

1. - 27. (Canceled)

28. (Previously Presented) A method for fabricating a composite material, the method comprising the steps of:

providing a parent substance containing a silicon nitride and a metal silicide, the silicon nitride being Si_3N_4 and the metal silicide being of a form Me_5Si_3 , where Me is a metal;

establishing, as a function of a sintering temperature, an upper limit and a lower limit of partial nitrogen pressures so that the silicon nitride is stable at the lower limit and the metal silicide is stable at the upper limit; and

gas pressure sintering the parent substance in a nitrogenous atmosphere based on the lower limit and the upper limit.

29. (Previously Presented) The method of claim 28, wherein the metal of the metal silicide is selected from a metal of one of a 5th subgroup and a 6th subgroup of the periodic table.

30. (Previously Presented) The method of claim 29, wherein the metal of the metal silicide is selected from the group of Mo, Nb, V, Nb, Ta and W.

31. (Previously Presented) The method of claim 28, wherein a weight ratio of Si_3N_4 : Me_5Si_3 is between about 20:80 and about 80:20.

32. (Previously Presented) The method of claim 28, wherein the parent substance includes sinter additives.

33. (Previously Presented) The method of claim 32, wherein the sinter additives include at least one of aluminum oxide and yttrium oxide.

34. (Currently Amended) The method of claim 32, wherein a concentration of the sinter additives in an initial mixture is [retained at] less than about 10 % by weight.

35. (Previously Presented) The method of claim 28, wherein the parent substance includes pressing agents and binding agents.

36. (Previously Presented) The method of claim 28, wherein the parent substance is ground into a powder.

37. (Previously Presented) The method of claim 28, further comprising one of the following sets of steps:

(a) forming the parent substance into a desired shape by one of ceramic injection molding and cold-isostatic pressing before the step of gas pressure sintering; and

(b) (i) forming the parent substance into the desired shape by the one of the ceramic injection molding and the cold-isostatic pressing before the step of gas pressure sintering, and

(ii) forming the composite material by green processing subsequent to the step of gas pressure sintering.

38. (Previously Presented) The method of claim 28, wherein the parent substance is cold-isostatically compressed at a pressure of between about 100 MPa and about 300 MPa.

39. (Previously Presented) The method of claim 28, further comprising the step of pre-sintering the parent substance prior to the step of gas pressure sintering.

40. (Previously Presented) The method of claim 39, wherein the step of pre-sintering is performed at a temperature of between about 500°C and about 700°C.

41. (Previously Presented) The method of claim 39, wherein the step of pre-sintering is performed at a pressure of between about 0.05 MPa and about 0.2 MPa.

42. (Previously Presented) The method of claim 28, wherein the step of gas pressure sintering is performed at a temperature of between about 1700°C and about 1900°C.

43. (Previously Presented) The method of claim 28, wherein the step of gas pressure sintering is performed at a partial N₂ pressure of between about 0.5 MPa and about 1.0 MPa.

44. (Previously Presented) The method of claim 29, wherein:

the metal of the metal silicide is molybdenum; and

the upper limit is set as an upper limit of partial N₂ pressures (p_{N2}) according to a first equation of $y_1 = 5.3071 \cdot \ln(T) - 37.014$, and

the lower limit is set as a lower limit of the partial N₂ pressures (p_{N2}) according to a second equation of $y_2 = 7.3494 \cdot \ln(T) - 54.124$,

where y₁ and y₂ represent lg(p_{N2} [bar]) values.

45. (Previously Presented) The method of claim 29, wherein:

the metal of the metal silicide is niobium; and

the upper limit is set as an upper limit of partial N₂ pressures (p_{N2}) according to a first equation of $y_1 = 7.8968 \cdot \ln(T) - 58.8$, and

the lower limit is set as a lower limit of the partial N₂ pressures (p_{N2}) according to a second equation of $y_2 = 8.2598 \cdot \ln(T) - 62.064$,

where y₁ and y₂ represent lg(p_{N2} [bar]) values.

46. (Previously Presented) The method of claim 28, wherein the step of gas pressure sintering is performed in a gas-pressure sintering furnace.

47. (Previously Amended) A silicon-containing composite material comprising a silicon-containing material made of Si_3N_4 and a metal silicide, wherein the metal silicide is selected from the group of Nb_5Si_3 , V_5Si_3 , Ta_5Si_3 and W_5Si_3 , wherein the metal silicide contains carbon.

48. (Canceled)

49. (Previously Amended) The composite material of claim 47, wherein the metal silicide contains carbon with a concentration specific to the composite material of about 0.3 % by weight to about 0.6 % by weight.

50. (Previously Presented) The composite material of claim 47, wherein a mass ratio of $\text{Si}_3\text{N}_4:\text{Me}_5\text{Si}_3$ is between about 20:80 and about 80:20.

51. (Previously Presented) The composite material of claim 47, wherein the parent substance includes sinter additives.

52. (Previously Presented) The composite material of claim 51, wherein the sinter additives include at least one of aluminum oxide and yttrium oxide.

53. (Previously Presented) The composite material of claim 51, wherein a concentration of the sinter additives in an initial mixture is less than about 10 % by weight.

54. (Previously Presented) The composite material of claim 47, wherein the metal silicide is Nb_5Si_3 .